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BARBERRY ERADICATION

IN

VIRGINIA

THIS IS
WHAT BLACK
STEM RUST
DOES TO
WHEAT



PLUMP
HEALTHY
KERNELS
FROM
RUST-FREE
WHEAT

WHAT WILL BARBERRY ERADICATION ACCOMPLISH?

THE ERADICATION of barberry bushes eliminates the spring home of the stem rust fungus, thus reducing the number of local rust outbreaks which often coalesce to form widespread epidemics. To insure desired results, complete eradication of all susceptible barberries is necessary, as a single bush may be responsible for a stem rust epidemic extending over an area of several square miles, or, in some instances, several counties.

To control stem rust in the grain-growing sections of Virginia:

- (1) All rust-spreading species of barberry should be destroyed.
- (2) Rust-resistant varieties of grain should be selected for seed.
- (3) By sowing early-maturing varieties on properly prepared and fertilized seed-beds.

In many European countries, the loss caused by stem rust damage has been materially reduced by destroying rust-spreading barberry bushes in better farming areas.

UNITED STATES DEPARTMENT OF AGRICULTURE
Bureau of Entomology and Plant Quarantine
Cooperating with
State Agricultural and Other Agencies
In The Eradication of The Rust-spreading Barberry
Barberry Eradication Office
500 Agricultural Hall, V.P.I.
Blacksburg, Virginia

Dear Sir:

Many farmers in Virginia and the adjoining States are protecting their small grain crops (oats, wheat, barley, and rye) from the damaging effects of stem rust by helping to eradicate rust-spreading barberry bushes.

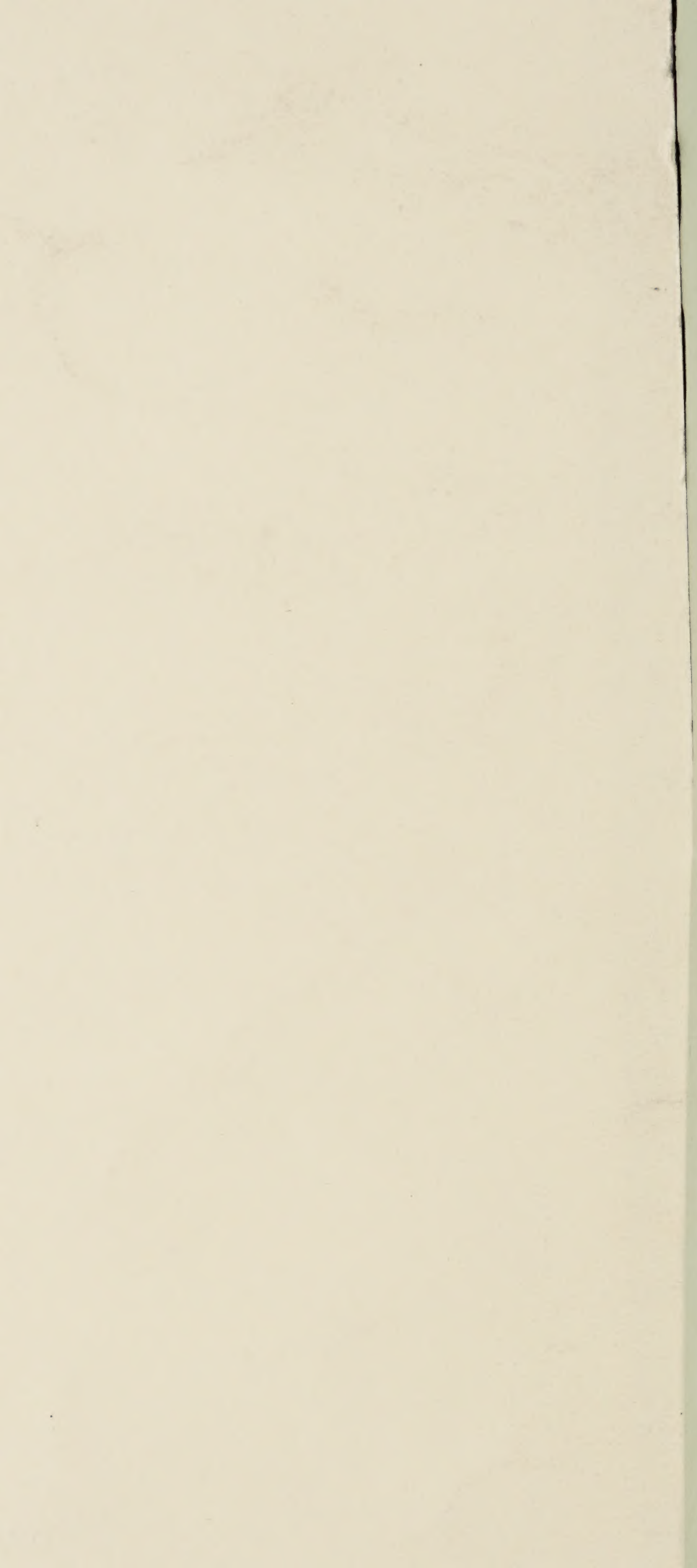
This circular contains a brief discussion of the stem rust disease. Learn what it is, how it injures the grain crops, and what can be done to help prevent it.

Do not destroy bushes that you think are rust-spreading barberry until you have sent a twig to the above address and had it identified. Only certain kinds of barberry harbor rust.

Very truly yours,

G. E. Matheny

G. E. Matheny
Associate Pathologist, In Charge
Barberry Eradication in Virginia



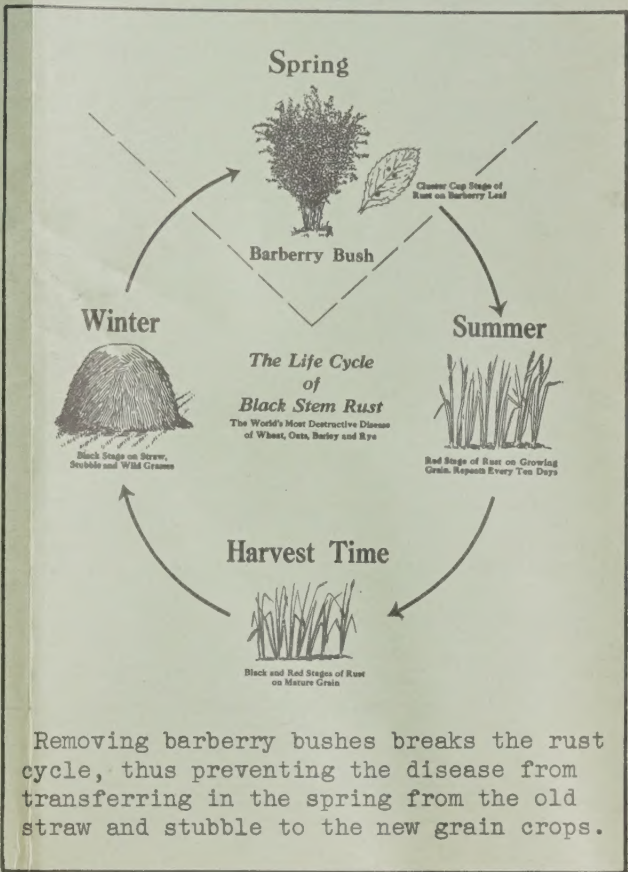
PROTECT VIRGINIA GRAIN CROPS FROM STEM RUST

STEM RUST CAUSED BY PARASITIC PLANT

STEM RUST is a disease of wheat, oats, barley, rye, and many native grasses that is caused by a tiny parasitic plant called a fungus. The rust fungus is peculiar in that it lives during the spring on the leaves of the harmful barberry and during the remainder of the year on the leaves and stems of grains and grasses. Rust reproduces by means of spores that germinate and grow in a manner similar to that of seeds of higher plants.

As the grain crops ripen, the rust fungus also prepares for the winter. Tiny dark brown or black spores remain alive during the winter on the old straw, stubble, and wild grasses. In the spring they germinate and in a few hours produce smaller spores, which are discharged into the surrounding air. These tiny spores can attack only the leaves and tender growing shoots of certain kinds of barberry bushes. On the barberry another crop of

NATIVE BARBERRY IS SPRING HOME FOR RUST FUNGUS



WARM DAMP WEATHER FAVORS RUST

spores is produced, which in turn infect the growing grain plants, producing the red or summer stage of the fungus. Thus the diseased leaves of barberry become the source of rust infection to the new grain crops.

The rapidity with which rust spreads depends largely upon weather conditions. Just as grain plants must have moisture and favorable temperature for normal growth, so also must rust plants have the right kind of weather. Rust grows and spreads rapidly on warm, damp days.

A field of grain attacked by stem rust about the time it is heading may be completely destroyed within a brief period of 2 to 3 weeks. More often, of course, the injury is less severe, causing reduced yields of light-weight, poor-quality grain. Preventing stem rust helps to lower the cost of production by stabilizing yields per acre and quality of the harvested grains.

LEARN TO KNOW THE RUST-SPREADING BARBERRY

RUST-SPREADING BARBERRY EASILY RECOGNIZED

A PRACTICAL MEANS of reducing the amount of loss caused by stem rust in the grain-growing sections of Virginia is to eradicate all species of barberry that serve as the spring home for the fungus.

The native or rust-spreading barberry is a bush or shrub that in general growth habit somewhat resembles a wild rose or huckleberry. It may be found growing in pastures, woods, along fence rows, on rocky hill-sides, or around limestone outcrops. Extensive uncultivated areas often become infested with barberry as a result of birds scattering seeds, and by sprouts from roots. By examining the leaves, thorns, berries, and roots, barberry bushes may be easily distinguished from other shrubs (See adjoining diagram).



JAPANESE BARBERRY HARMLESS

THE JAPANESE BARBERRY so commonly grown as a decorative shrub in lawns and gardens is not attacked by stem rust and should not be destroyed. The leaves of this species have smooth edges and may be green or purple in color. The bark is reddish brown and the berries, bright red when ripe, are usually produced singly or not more than two or three in a place. The thorns also differ from those of the native barberry. They usually appear one in a place, or in pairs.

SINCE APRIL 1934, more than 78 million rust-spreading barberry bushes have been destroyed on 2,119 different properties in Virginia. A careful inspection has been made of all uncultivated lands on 741 square miles in 10 southwestern counties.

As a further protection from stem rust, property owners should take every precaution possible to prevent the regrowth of barberry in communities where the initial eradication has been completed.

HISTORICAL RECORDS show that stem rust has been one of the greatest hazards in the production of small grains. An individual reporting harmful barberry lends valuable assistance in the control of black stem rust.

NATIVE BARBERRY SPREADS BY ROOTS



NATIVE BARBERRY BUSHES are located by groups of local workers under the supervision of the U. S. Department of Agriculture. The bushes are killed by applying common salt on the ground around the stems, or by careful grubbing to remove all root fragments.

KILL THE HARMFUL BARBERRY
NOW and help protect the
grain crops of the future.

Many native barberry bushes have been located because of the development of local rust epidemics near them. Many more have not been found. The cooperation of everyone is needed in order to find and eradicate the bushes that remain. Certain areas are relatively free from barberries. BARBERRY ERADICATION HAS REDUCED STEM RUST LOSSES IN VIRGINIA.

VIRGINIA BEGINS BARBERRY ERADICATION

THE FIRST LEGISLATION in the United States requiring the eradication of rust-spreading barberry bushes was enacted by the Colonists in the New England States in 1726. It was not until 1918, however, that an organized eradication program was undertaken in the important grain-producing areas of the country.

Since 1934 when the eradication of rust-spreading barberries was first undertaken in southwestern Virginia, more than 78 million bushes have been destroyed. Practically all of these were found growing wild in timbered areas and on rough pasture lands along streams and rivers where seed had been scattered by birds. Had these bushes been allowed to continue spreading, both the amount of damage caused by rust and the cost of control measures would have steadily increased.

Barberry Eradication in Virginia is administered by the Bureau of Entomology and Plant Quarantine, U. S. Department of Agriculture, in cooperation with the Virginia Polytechnic Institute, the Department of Agriculture and Immigration of Virginia, the Extension Division, V.P.I., and other agricultural interests of Virginia.

